



- UL / IEC / EN 60601 3.1 Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- High power density: 500W in 3" x 5" footprint
- Open Frame or Enclosed Versions Available
- Remote ON/OFF Function
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V @ 1A with Fan, @ 0.4A without Fan
- High Efficiency up to 93%
- P.F.C. Function >0.95

### Electrical Specifications

#### Input

Input Voltage	90-264 VAC or 120-370 VDC
Input Frequency	47-63 Hz
Input Current (RMS)	<6.0A @ 115 VAC; <3.00A @ 230 VAC
Power Factor	>0.95 @ full load (230 VAC)
Inrush Current (<2ms)	<40A @ 115 VAC; <80A @ 230 VAC
Earth Leakage Current	< 0.1 mA max. (Input-Output)

#### Output

Total Output	500W max. See table for details
Output Voltage	See table
Hold Up Time	8ms typical at full load and 115VAC nominal line. <small>(Note 4)</small>
Efficiency	Up to 93%. See table for details
Minimum Load	0%

#### Protection

Overvoltage	110-132%, Auto recovery
Overload	145-170%, Auto recovery
Short Circuit	Auto recovery

#### Environmental & Operating

Operating Temperature	-40°C to +70°C (with derating)
Storage Temperature	-40°C to +85°C
Humidity	95% RH
Operating altitude	<3000m for medical use
MTBF:	>160K hours per MIL-HDBK-217F at full load and 25°C ambient

#### Compliance

##### Safety Approvals

<b>USA/Canada</b>	UL60601-1 3 <sup>rd</sup> Edition , UL/cUL60950-1 UL62368-1 <i>(Pending)</i>
<b>Europe</b>	IEC/EN60601-1 3rd edition, TUV EN60950-1 CB Report EN62368-1 <i>(Pending)</i>
<b>Isolation:</b>	4000VAC input to output, 2 x MOPP 1500VAC input to ground, 1 x MOPP 1500VAC output to ground, 1 x MOPP
<b>EMC (IEC60601-1-2:2014) :</b>	FCC Class B Radiated & Conducted EN55011/55022 Class B Radiated & Conducted
<b>Harmonic Currents</b>	IEC 61000-3-2:
<b>Voltage Flicker</b>	IEC 61000-3-3
<b>Electrostatic Discharge</b>	IEC 61000-4-2: 15kV Air, 8kV contact
<b>Radiated Immunity</b>	IEC 61000-4-3: 10V/m
<b>EFT/Burst</b>	IEC 61000-4-4: +/-2kV
<b>Surge Immunity</b>	IEC 61000-4-5: 2005 1kV diff, 2kV com
<b>Conducted Immunity</b>	IEC 61000-4-6: 10Vrms
<b>Magnetic Field</b>	IEC 61000-4-8: 30A/m
<b>Dips / Interruptions</b>	IEC 61000-4-11: 30% reduction for 500ms, 100% reduction for 10ms.

#### General

Dimensions	3.0"W x 5.03"L x 1.38"H
Weight	1.058 pounds (480 g)



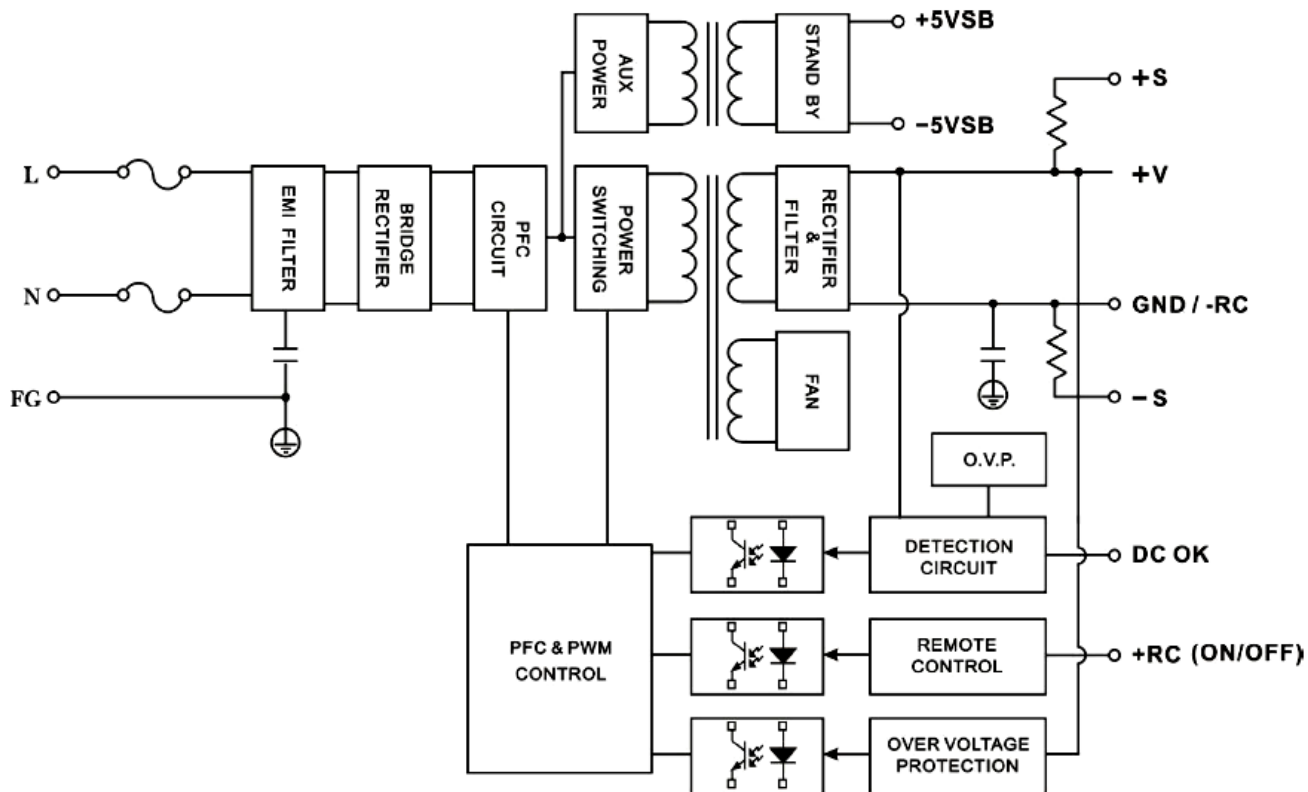
### Models and Ratings

Model <sup>1</sup>	Output Voltage	Max Load Convection <sup>2</sup>	Max Load 30CFM Forced Air	Output Regulation	Ripple & Noise <sup>6</sup>	Efficiency (230 VAC)	Fan Output	+5VSB Output <sup>7</sup>
PDAM500-12A	12V	20A	41.5A	±1.2%	160mV	90.5%	12V/0.3A	5V/1A
PDAM500-13A	15V	14.66A	33.3A	±1.0%	160mV	90.5%	12V/0.3A	5V/1A
PDAM500-14A	24V	10A	20.8A	±1.0%	240mV	92%	12V/0.3A	5V/1A
PDAM500-18A	48V	5A	10.41A	±1.0%	480mV	93%	12V/0.3A	5V/1A

#### Note:

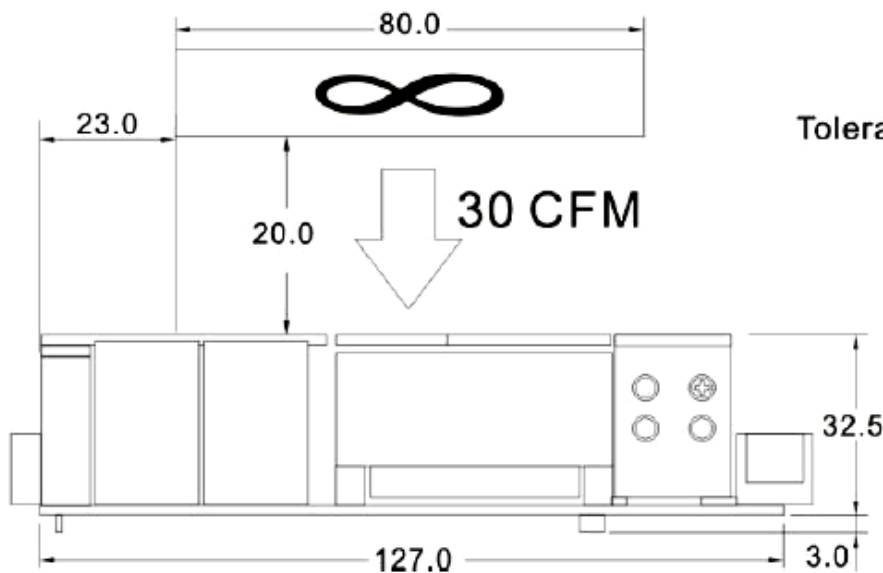
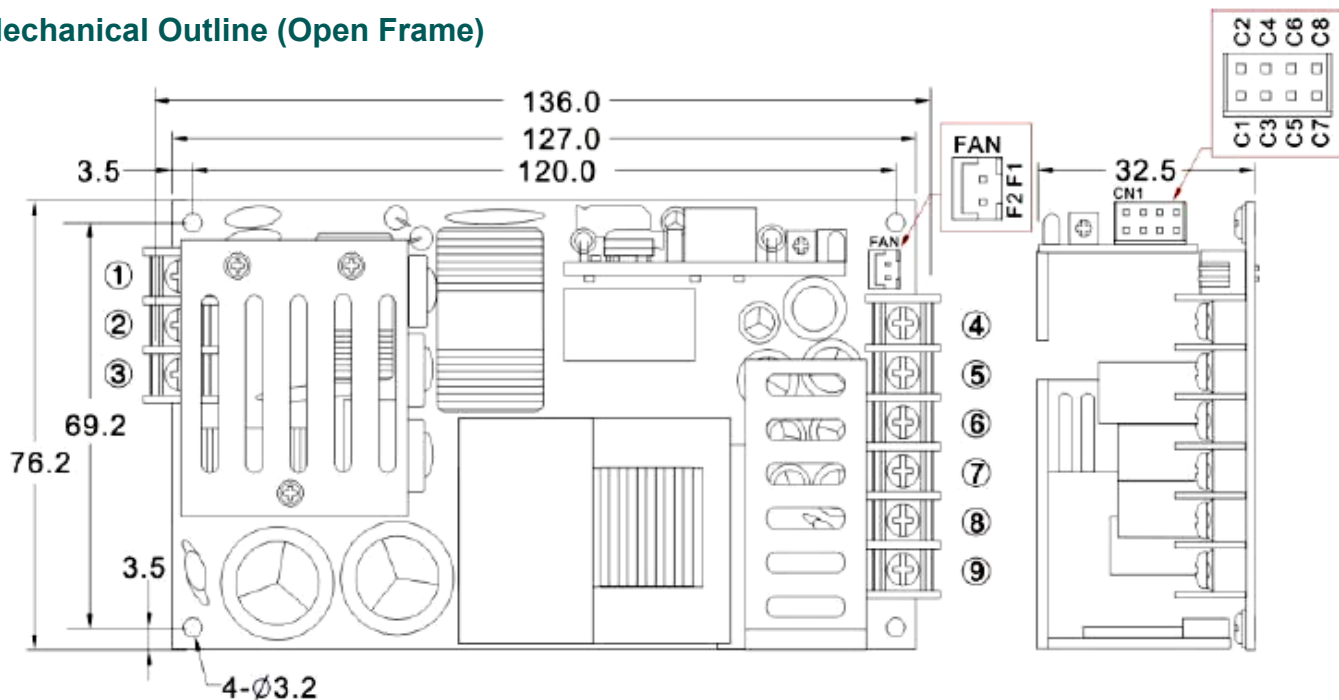
- All models are available in an enclosed version (e.g. PDAM500-12A would be PDAM500-12C)
- Listed values are taken at 230VAC. At 115VAC, 19.16A, 9.58A, and 4.8A for the models listed as shown.
- Recommended to add Varistor 14S471K at L/N input side in parallel.
- Hold-up Time measured at 90% Vout
- Main Vout >3% Load, 12V (Aux) / 0.3A.
- Measured at 20MHz bandwidth with a 47uF electrolytic capacitor and 0.1uF ceramic capacitor in parallel at the output connector.
- 400mA convection rated.

### Block Diagram





### Mechanical Outline (Open Frame)



Tolerance  $\pm 0.5$  mm

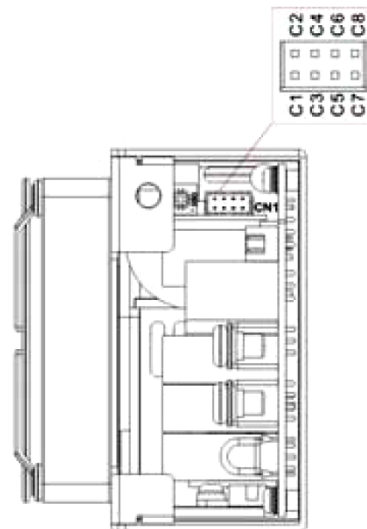
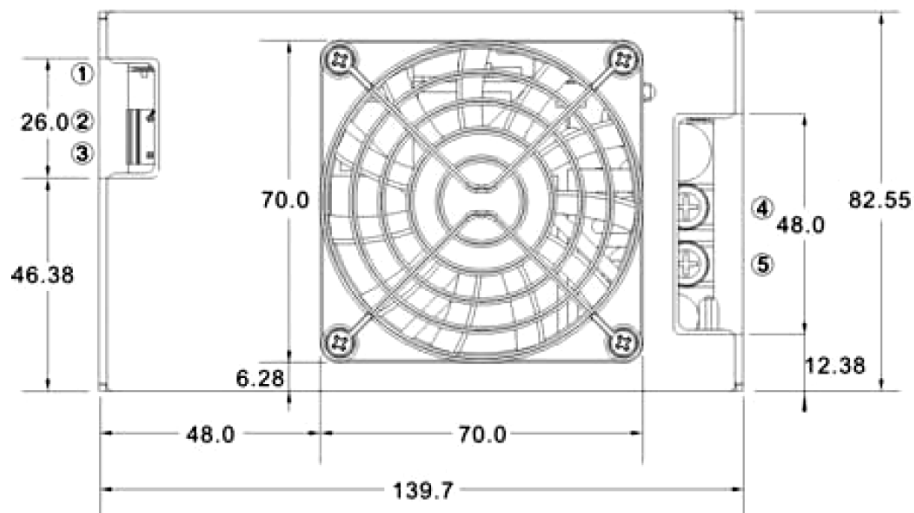
PIN #	Single
1	FG
2	AC IN (N)
3	AC IN (L)
4-6	+DC OUT
7-9	-DC OUT

#### Connector Pin (FAN)

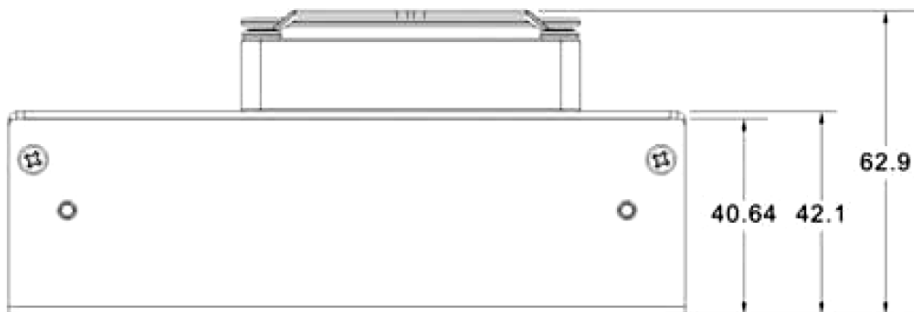
PIN #	Single
F1	+12V
F2	GND



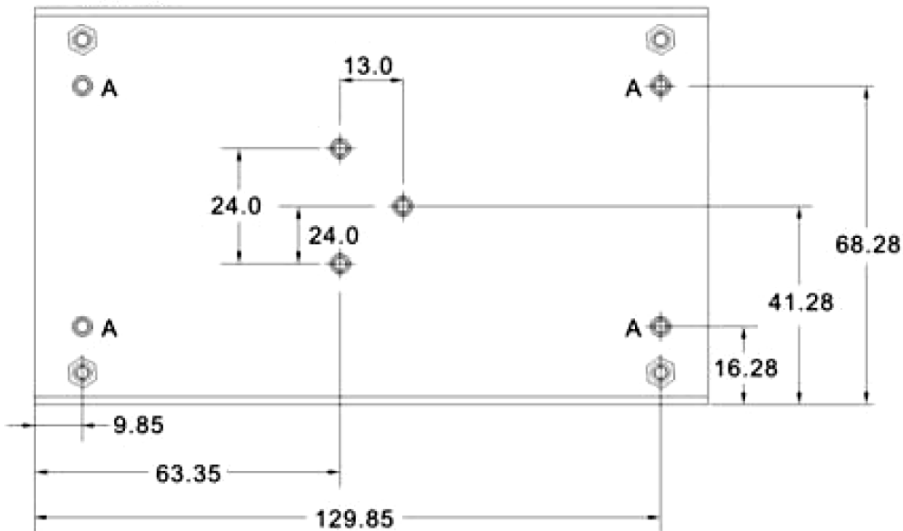
### Mechanical Outline (Enclosed)



Tolerance  $\pm 0.5$  mm



A=M3x0.5P



### Connector Pin (CN1)

PIN #	Single
C1	-5VSB
C2	+5VSB
C3	GND
C4	DC OK
C5	-RC
C6	+RC
C7	-S
C8	+S



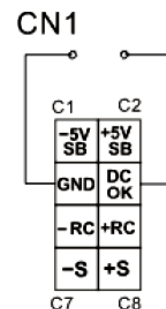
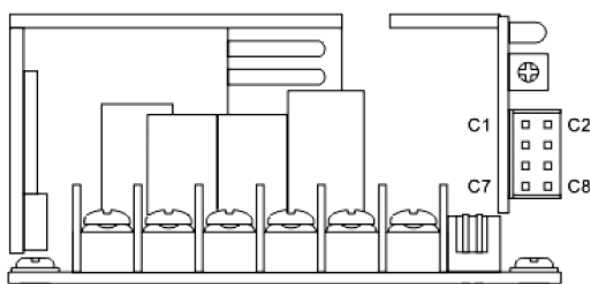
### Function Description of CN1

Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 3.7~6V, referenced to pin C8 (+5VSB). The maximum load current is 0.6A.
C3	GND	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK signal is a DC output, referenced to pin C6 (DC-OK GND).
C5	-RC	This pin connects to the negative terminal (-V). Return for DC-OK and -RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C4 (-RC), Short: Power OFF, Open: Power ON.
C7	-S	Negative sensing. The -S Signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.
C8	+S	Positive sensing. The +S Signal should be connected to the negative terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect. The maximum line drop compensation is 0.3V.

### Function Manual & Application

#### 1. DC-OK Signal

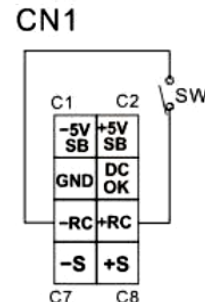
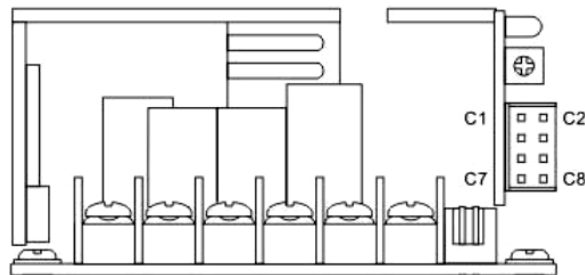
Between DC-OK and GND	Output Status
3.7~6V	ON
0~1V	OFF



#### 2. Remote Control

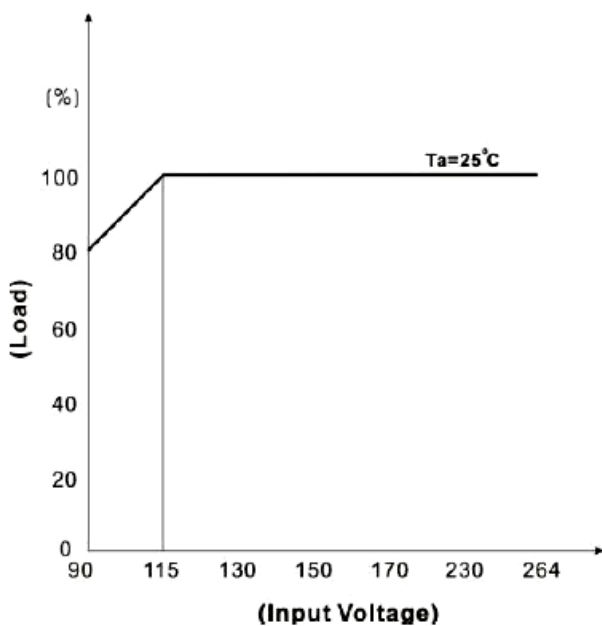
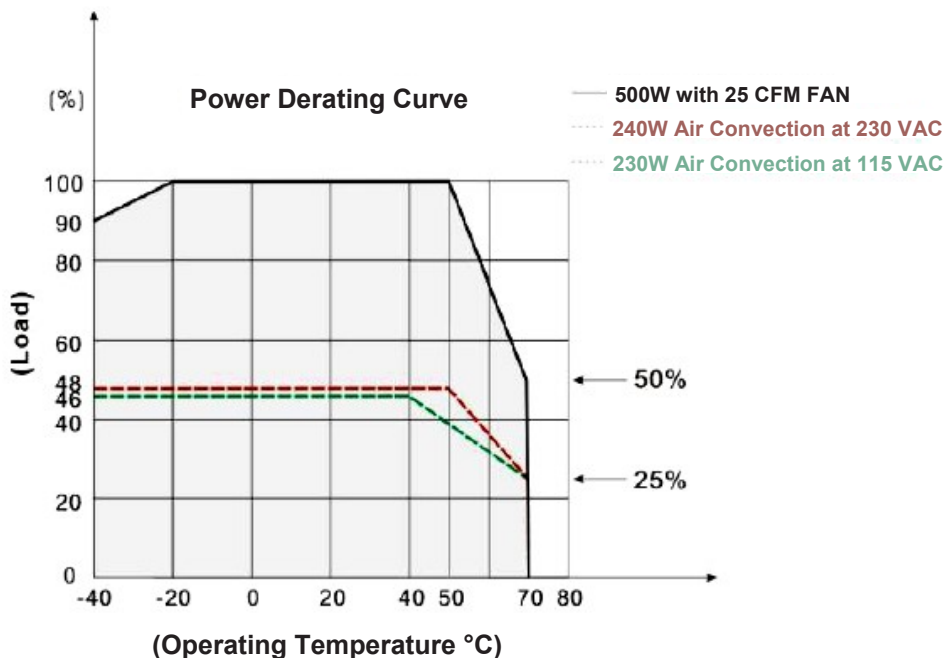
The unit can be turned ON/OFF by using the "Remote Control" function.

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	ON





### Power Derating





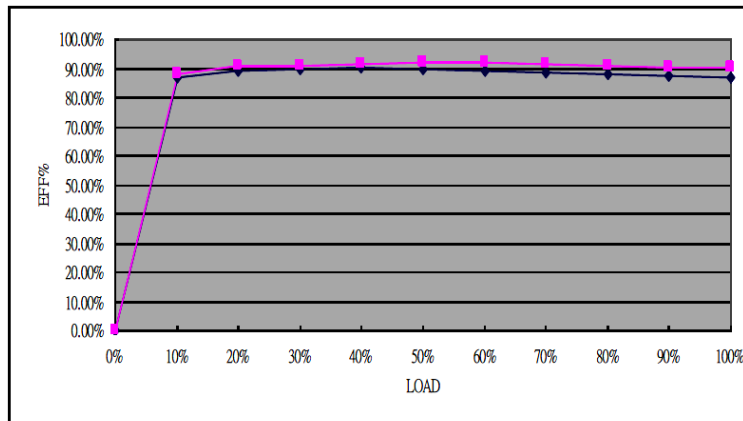
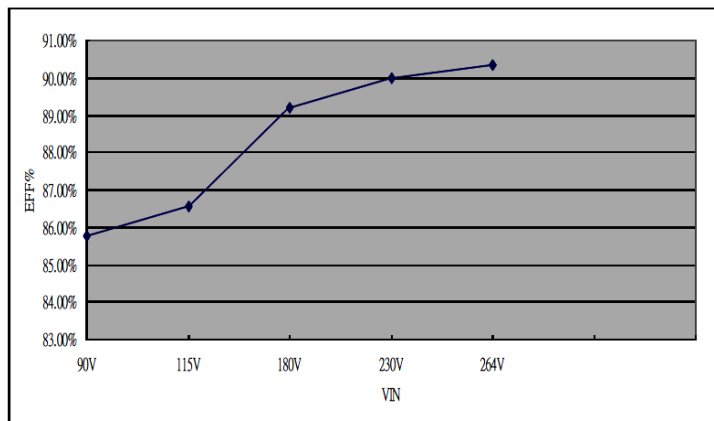


### Efficiency Versus Load

#### PDAM500-12

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	85.78	86.58	89.21	90.01	90.34

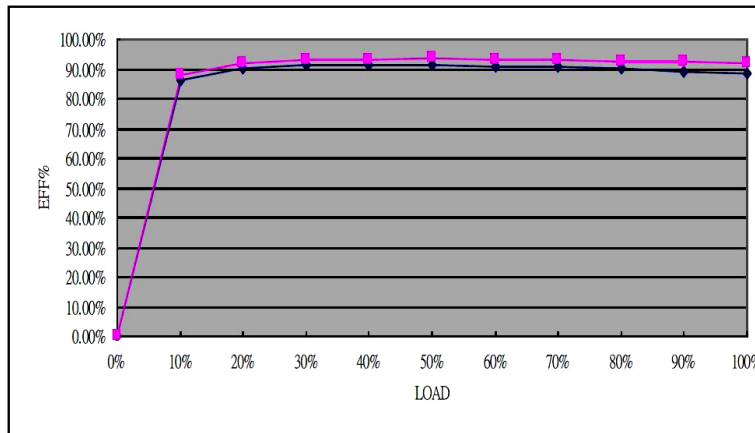
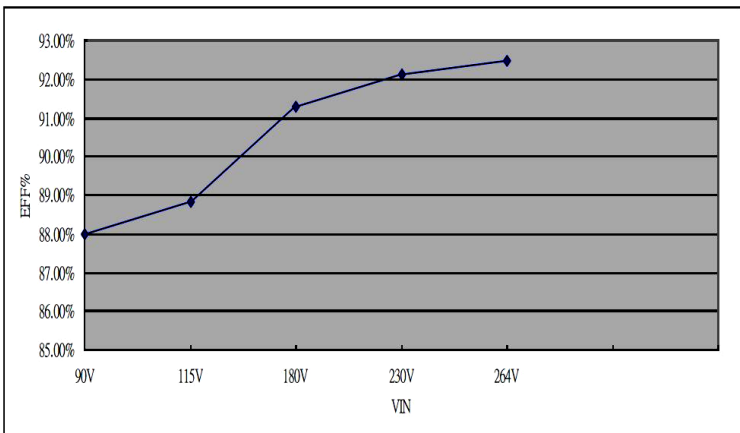
LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.67	89.20	89.80	90.06	89.87
230V (%)	88.19	90.82	91.00	91.71	91.86
Load (%)	60	70	80	90	100
115V (%)	89.30	88.77	88.18	87.27	86.58
230V (%)	91.77	91.40	90.79	90.44	90.01



#### PDAM500-14

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.99	88.84	91.29	92.13	92.48

LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.38	90.14	91.42	91.48	91.52
230V (%)	87.90	91.79	93.12	93.40	93.58
Load (%)	60	70	80	90	100
115V (%)	91.12	90.61	90.20	89.35	88.84
230V (%)	93.39	93.27	92.72	92.47	92.13



### Efficiency Versus Load

#### PDAM500-18

VIN VS Efficiency					
Input Voltage (V)	90	115	180	230	264
Efficiency (%)	87.36	89.18	92.88	93.89	94.33

LOAD VS Efficiency					
Load (%)	10	20	30	40	50
115V (%)	86.60	90.27	91.54	91.83	91.84
230V (%)	89.45	93.31	94.10	94.45	94.66
Load (%)	60	70	80	90	100
115V (%)	91.67	91.33	90.72	90.14	89.47
230V (%)	94.65	94.47	94.22	94.29	93.96

